Effects of training on controllability attributions of behavioural excesses and deficits shown by adults with Down syndrome and dementia

Kalsy, S., Heath, R., Adams, D. & Oliver, C.

Cerebra Centre for Neurodevelopmental Disorders,
School of Psychology,
University of Birmingham

Please use this reference when citing this work:

Abstract

Background. Whereas there is a knowledge base on staff attributions of challenging behaviour, there has been little research on the effects of training, type of behaviour and biological context on staff attributions of controllability in the context of people with intellectual disabilities and dementia.

Methods. A mixed design was used to investigate the effects of three factors on care staff attributions of the controllability of challenging behaviour. Pre- and post training measures were administered to participants (N = 97) attending training on ageing, dementia and people with intellectual disabilities.

Results. No significant effects of diagnosis or type of behaviour on attributions were found. There was a significant increase in knowledge after training (p<.001) and training was found to significantly decrease the attribution of controllability (p<.001).

Conclusion. These results suggest that training that focuses on aspects of change relevant to behaviour can favourably influence care staff’s knowledge and attributions of controllability within the context of people with Down syndrome and dementia.
Introduction:

Research into the relevance of attributions of care staff and their responses to challenging behaviour has increasingly focused on variables that influence caregiver-service user interactions (Dagnan, Trower & Smith 1998; Dagnan & Cairns 2005). Manipulation of variables, such as the form of behaviour and degree of intellectual disability, indicates that the path from episodes of behaviour to caregiver response is influenced by context (Jones & Hastings 2003) with implications for a more targeted approach to information dissemination and staff training. To date little research has examined whether behaviour accompanying biologically determined conditions, such as dementia, overlaying intellectual disability influences caregiver attributions (Whitehouse, Chamberlain & Tukka 2000). Furthermore, the impact of training on attributions within the context of people with Down syndrome and Alzheimer’s disease has not been explored.

People with Down syndrome are at high risk for developing Alzheimer's disease (Crayton, Oliver, Holland, Bradbury and Hall, 1998). Estimates of the prevalence rates of Alzheimer's disease in people with Down syndrome vary from 10 – 25% in those aged 40 – 49 years, up to 30 – 75% in those aged over 60 years (Aylward, Burt, Thorpe, Lai and Dalton, 1997). People with Down syndrome and Alzheimer’s disease experience cognitive impairments, such as memory loss and deficits in executive functioning, alongside behavioural deficits (such as skill loss) and excesses (such as wandering), that are commonly experienced by caregivers as challenging and ultimately have negative impacts upon life experiences (Oliver, Crayton, Holland and Hall 2000).

There is a need to support caregivers in coping with cognitive and behavioural change associated with dementia and Down syndrome. If interventions are to be implemented they need to be put in place via caregivers as the knowledge and skills of the caregiver are essential to ensuring good quality of life and care for the person with intellectual disabilities and dementia (Wilkinson, Kerr & Cunningham 2005). Interventions in the form of training are likely to be helpful in supporting caregivers and improving the life experiences of the individuals for whom they care.
Caregiver training and attributions as a form of behavioural explanations have received increased interest with the main applications derived from Weiner’s attribution model of helping behaviour (Weiner 1980; Dagnan et al 1998, Grey, McClean & Barnes-Holmes 2002; Jones & Hastings 2003). Key factors within this model include attributions of controllability and stability that are part of the appraisal of the person/situation and cause/effect dichotomy. This dichotomy is at odds with how intentions, beliefs and desires are used to explain behaviour. Thus, more recent developments in attribution theory specify the cognitive-emotional, social and psychological variables that influence the construction of explanations (Malle 1999).

Developments in the field of attribution theory are pertinent to caregiver training due to the implications for optimism for change and helping behaviour of caregivers. Studies have indicated that helping behaviour is predicted by the level of optimism, optimism by negative emotions and negative emotions by the attribution of controllability (see Dagnan et al., 1998). More recent studies that have explored an amended version of Weiner’s helping behaviour model that was more specific to care staff working with people with intellectual disabilities and challenging behaviours, noted limited support for the model (see Grey, McClean & Barnes-Holmes 2002; Jones & Hastings 2003). Nevertheless, there has been little attention paid to differences in attributions about the cause of behavioural deficits (skill loss) in contrast with behavioural excesses (challenging behaviour) within the context of a biologically determined psychological presentation, such as dementia resulting from Alzheimer’s disease in Down syndrome.

The aim of this study is to examine the effects of care staff training in ageing, dementia and people with intellectual disabilities on the attributional style (specifically controllability) and optimism for change in behavioural deficits and excesses.

**Method:**

**Participants:**

Ninety-seven care staff working in Social Services community day centres for adults with intellectual disabilities took part in the study. The sample comprised 32 (33%) males and
65 (67%) females and had a mean age of 42.2 years (sd = 10.63). Participants were employed in their current role for an average of 60.7 months (sd = 67.04).

Procedure:
Three service managers requested staff training. At each training event, participants completed the attribution questionnaire, the knowledge quiz and optimism scales both pre-and post-training. The training (see Appendix A) was aimed at increasing staff knowledge of ageing, dementia and intellectual disabilities.

Design:
Three factors with two levels (diagnosis of Alzheimer’s disease or no diagnosis; behavioural deficit or excess; pre-training or post-training) were investigated in a mixed factorial design.

Measures:
Case Vignettes
Participants were randomly assigned one of four vignettes, which described a person with Down syndrome exhibiting a behavioural excess (repetitive questioning) or behavioural deficit (lack of response to staff). The vignettes were adapted from previous training workshops and face validity checks were completed by researcher and clinician members of the wider project team. Two vignettes described the person as having a diagnosis of Alzheimer’s disease; the other two suggested that further assessments were required.

The Controllability of Beliefs Scale
Participants ratings of controllability of the behaviour were assessed using this 15-item scale (Dagnan, Grant, McDonnell, 2004). A five-point Likert scale was used to score the ratings with higher scores indicating higher ratings of controllability. The measure has robust internal consistency (Cronbach’s alpha = .84).

Knowledge of ageing and intellectual disability
Participants’ knowledge of ageing and intellectual disabilities was assessed with a 20–item true-false questionnaire taken from a computer-based staff training course (McCallion & Janicki, 2002), based on Palmore’s (1988) ‘Facts on Aging Quiz’. Whilst psychometric properties are not readily available, the measure has been used extensively in staff training programmes internationally.

**Optimism question**

Participants rated their agreement with two statements concerning the potential for a change in the challenging behaviour on a seven point Likert scale (see Dagnan et al., 1998). Higher scores indicated greater optimism.

**Results:**

In order to ensure that participants completing the different vignettes were comparable, mean age, time spent at work, knowledge scores pre-training, and the distribution of roles across groups was examined. Analyses of variance and Chi squared tests revealed no significant differences between groups.

The effects of training on knowledge were examined. The mean knowledge score pre-training was 14.34 (sd = 2.33) and post-training was 15.42 (sd = 2.57). A paired t-test analysis indicated that this increase was significant (t (85) = 4.1, p<.001). Thus, the training did significantly increase participants’ knowledge of ageing and dementia.

To evaluate the effects of training on controllability, a three-way analysis of variance was conducted (label of Alzheimer's disease x behaviour type x training). See Table 1.

++++++ Insert table 1 here +++++++

The ANOVA revealed no first or second order interactions and there was no significant main effects on controllability for label (Alzheimer's disease or not) or behaviour type (deficit or excess). However, a significant main effect of training on controllability was evident (F(2)=28.95,  p<.001), indicating that the training lowered controllability ratings.
As the initial analysis found no differences between participants’ scores on knowledge, controllability and optimism pre-training (paired t-test (t (74) = 1.98, ns), the data were pooled for a secondary analysis of the relationships between staff characteristics and these variables prior to training (see Table 2).

Correlation coefficients were calculated for age, time at work, knowledge, optimism and the attribution of controllability. Higher age was found to correlate with higher attributions of controllability (r (88) = .35, p<.01) and with a longer time spent in current role (r (89) = .42, p<.001). Longer time spent in current role was also correlated with higher attributions of controllability (r (90) = .22, p<.05).

**Discussion**

The main aim of this study was to examine the effects of staff training on controllability attributions and optimism ratings of behavioural deficits and excesses in people with Down syndrome and dementia. The first stage of the analysis indicated that training did increase staff knowledge, which is broadly in support of research on staff training initiatives (McKenzie, Paxton, Patrick, Matheson & Murray 2000). In this study, the mean knowledge scores increased by approximately one question (out of 20), a small increase which may be due to ceiling effects of the questionnaire and its basic content particularly for care staff who have experience in supporting ageing adults with intellectual disabilities.

The analysis indicated that training lowered the controllability ratings of the participants. This may have been influenced by the prominence given to the, evidentially supported, inevitable skill loss and behavioural change with ageing in Down syndrome which has been interpreted as eroding internal control over behaviour. This interpretation may have relevance to the emerging field of behavioural phenotypes and the relative contribution of biological and environmental factors to the expression of behaviour, which are beyond the scope of this brief report.
The effects of diagnosis and type of behaviour on mean controllability ratings indicated no significant differences between groups and a secondary analysis revealed a significant positive correlation between age and controllability ratings. This is in contrast to that of Dagnan et al. (1998) and whilst methodological differences between the studies (such as the use of vignettes) and the behavioural context (specific behavioural excesses/deficits as opposed to aggression to others) under consideration may impact upon the direction of correlations, a key factor in this study may be the severity of the presenting behaviours, i.e. the behaviours described are more prevalent in the early to mid stage of the disease process and may thus be attributed as controllable by more experienced care staff.

Furthermore, there is a core issue of whether care staff understand behavioural deficits in people with intellectual disabilities and dementia, such as speaking less, as a challenging behaviour and intra-individual characteristics that impact on optimism for change such as a lack of knowing what to do.

In considering the relationship between the attributions of controllability as a precursor to optimism as highlighted by Dagnan et al (1998), the results of the present study do not support this relationship. This finding suggests that whilst again the broad context for the behaviour may influence the relationship from behaviour to carer response, a caveat is necessary for comparing this study to studies using more traditional descriptions of challenging behaviour. It is possible that the specific behaviours described in this study, whilst common place in the presentation of a person with intellectual disabilities and dementia, might not have been considered as ‘challenging’ in the same way that self-injury or aggression towards others might be.

The key clinical implications of the study are that even a brief programme of staff training can have a positive impact on staff knowledge. Clinically, there is a need to support caregivers in coping with cognitive and behavioural change associated with dementia in people with learning disabilities including Down syndrome and the knowledge, experiences and skills of the caregiver are essential to ensuring a good quality of life and care for the service user (Wilkinson, Kerr & Cunningham 2005). Thus, caregiver support in the form of training, albeit brief, is likely to be helpful in supporting caregivers and improving the life experiences of the individuals for whom
they care. Anecdotally, long-term impacts of this training on staff behaviour have included an increase in appropriate referrals to the local specialist psychology service for older people with intellectual disabilities and dementia and a greater utilisation of best practice guidance of assessment and functional interventions by staff supporting older people with intellectual disabilities in community settings.

This study has illustrated differences in the application of the attribution-optimism model influenced primarily by the broad context in which the behaviour is presented. This is important as it may indicate that a context that emphasises biological correlates of behaviour impacts on the extent to which less salient variables such as forms of behaviour are able to influence attributions and thus optimism for change. Further research into staff training and the application of attribution theory from social, cognitive-emotional and psychological positions in this area is warranted.
References:


Appendix A: Staff Training Programme

The staff training programme was a 4-hour workshop comprising of experiential and didactic teaching methods. Three separate workshops were provided and each cohort averaged 32 participants. The summary outline for the workshop included:

- A quiz on participants’ knowledge of ageing and dementia in people with intellectual disabilities
- The health problems associated with ageing in the general population and people with intellectual disabilities
- A background to dementia, including definitions, disease course and presentations
- The relationship between Alzheimer’s Disease and intellectual disabilities, with an emphasis on people with Down syndrome
- The prevalence, presentation and course of dementia of the Alzheimer’s type in people with Down syndrome including behavioural descriptors at different stages
- The assessment and differential diagnosis of dementia of the Alzheimer’s type in people with Down syndrome
- The intervention options and service responses when working with people with Down syndrome who have a diagnosis of dementia
- A case study drawing these themes together for participants to work through
Table 1. Effects of the label of Alzheimer's disease and type of behaviour on mean (sd) controllability scores pre- and post-training.

<table>
<thead>
<tr>
<th>Label</th>
<th>Topography</th>
<th>Pre-Training</th>
<th>Post-Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alzheimer</td>
<td>Deficit</td>
<td>33.00</td>
<td>25.09</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(9.23)</td>
<td>(8.03)</td>
</tr>
<tr>
<td></td>
<td>Excess</td>
<td>30.84</td>
<td>25.74</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(8.42)</td>
<td>(8.90)</td>
</tr>
<tr>
<td>No Alzheimers</td>
<td>Deficit</td>
<td>31.00</td>
<td>28.05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(10.21)</td>
<td>(21.14)</td>
</tr>
<tr>
<td></td>
<td>Excess</td>
<td>34.00</td>
<td>28.85</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(8.94)</td>
<td>(8.72)</td>
</tr>
</tbody>
</table>
Table 2. Correlation matrix showing relationships between age, time at work, knowledge, optimism and controllability.

<table>
<thead>
<tr>
<th></th>
<th>Time at work</th>
<th>Knowledge</th>
<th>Optimism</th>
<th>Controllability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.42**</td>
<td>-.2</td>
<td>-.05</td>
<td>.35**</td>
</tr>
<tr>
<td>Time at work</td>
<td>-</td>
<td>.06</td>
<td>.08</td>
<td>.22*</td>
</tr>
<tr>
<td>Knowledge</td>
<td>-</td>
<td>-</td>
<td>.09</td>
<td>-.08</td>
</tr>
<tr>
<td>Optimism</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-.02</td>
</tr>
</tbody>
</table>

** p<.01 level (2 tailed)
* p<.05 level (2 tailed)